

Case 3599***Coluber irregularis* Leach in Bowdich, 1819 (currently *Philothamnus irregularis*; Reptilia, Squamata): proposed conservation**

Danny Meirte

Royal Museum for Central Africa, Leuvensesteenweg 13, Tervuren 3080
Belgium (e-mail: danny.meirte@africamuseum.be)

Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific name *Coluber irregularis* Leach in Bowdich, 1819 (currently *Philothamnus irregularis*) for the African northern green bush snake. The name was placed on the Official List by a ruling in Opinion 328. This name is a junior primary homonym of *Coluber irregularis* Bechstein, 1802 (currently *Boiga irregularis*), used for the brown tree snake, known from Indonesia, Australia, Papua New Guinea and Melanesia, and infamous for its invasive colonization of Guam. Both names are in use and are not considered congeneric. It is proposed that the name *Coluber irregularis* Leach in Bowdich, 1819 be conserved by ruling that it is not invalid by reason of being a junior primary homonym. In order to conserve the name *Coluber irregularis* Leach in Bowdich, 1819, Opinion 328 suppressed the senior synonym *Coluber caesius* Cloquet, 1818. In that action, the name *Coluber azureus* Bonnaterre, 1790 (a senior objective synonym of *Coluber caesius* Cloquet, 1818) was overlooked. In this paper, *Coluber azureus* Bonnaterre, 1790 is declared a nomen oblitum under Article 23.9.2 of the Code.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; COLUBRIDAE; *Coluber*; *Coluber azureus*; *Philothamnus irregularis*; *Boiga irregularis*; green bush snake; brown tree snake; Africa; Indonesia; Australia; Papua New Guinea; Melanesia.

1. The name *Coluber irregularis* Leach in Bowdich, 1819 (p. 494) was placed on the Official List of Specific Names in Zoology by a ruling in Opinion 328 (Opinions and Declarations 9: 299–308, January 1955). This African species, also known as the common bush snake, green tree snake, irregular green snake and northern green bush snake, has a wide distribution throughout Western and Central Africa, from Senegal to Chad and the Central African Republic. Hughes (1985, p. 515) restricted the distribution of *Philothamnus irregularis* to Western Africa, and (as in Rasmussen, 1981, p. 176 and Hughes, 1983, p. 320) treated *P. irregularis battersbyi* Loveridge, 1951 from eastern Africa as a full species. Separation of *irregularis* from *battersbyi* is based on the dark pigmentation of the interior of the mouth in *irregularis*, unique within the genus (Dunger, 1973, p. 162). *Philothamnus bequaerti* (A. Smith, 1923) was treated as an aberrant form of *P. heterolepidotus* (Günther, 1863) by Loveridge (1958, p. 103), as a subspecies of *irregularis* by Meirte (1992, p. 73) and LeBreton (1999, p. 89) and as a full species by Joger (1990, pp. 96–97), Trape & Roux-Estève (1990, pp. 378–379) and later by many others, e.g. Chippaux (2001, p. 123), Spawls et al. (2002, p. 354), Chirio & Ineich (2006, p. 51) and Chirio

& LeBreton (2007, p. 514). The last authors, however, included Democratic Republic of the Congo and Uganda in the distribution of *P. irregularis*. In a recent IUCN list (Rödel & Schmitz, 2010), Gabon and Tanzania are also included in the distribution of *P. irregularis*, but the Democratic Republic of the Congo is not. It appears that IUCN listing of this species in Ethiopia, Namibia, Zambia and Zimbabwe among the 'native countries' as they are called on the IUCN list, is probably based on poorly annotated literature records. Brogard (2005, p. 140) added southern Sudan, northern Zaïre and Ethiopia. The Ethiopian records in fact apply to *Philothamnus battersbyi*, although *P. bequaerti* is also present there, as pointed out by Largen & Rasmussen (1993, p. 356). Since its first assignment to the genus *Philothamnus* A. Smith, 1847 by Buchholz & Peters (in Peters, 1876, p. 199), *irregularis* has been assigned to the genus *Chlorophis* Hallowell, 1857 (Boulenger, 1891, p. 306; 1894, p. 96; 1897a, p. 278; 1897b, p. 801), but never again to *Coluber* Linnaeus, 1758, now considered a monospecific genus restricted to the Nearctic species *Coluber constrictor* Linnaeus, 1758 (for a full discussion see Meirte, 1992, pp. 94–95). *Philothamnus irregularis* (Leach in Bowdich, 1819) has been the name most in use since the work of Loveridge (1951); only Laurent (1964, p. 105) and Roux-Estève (1969, p. 105) have recently used *Chlorophis* at the generic level. For a synonymy list see Loveridge (1958, pp. 85–91), FitzSimons (1962, p. 144) and Chippaux (2006, p. 128). The original description of *Coluber irregularis* (Leach in Bowdich, 1819, p. 494) gives the type locality 'Fantee', but no type indication. Boulenger (1894, p. 97) listed two type specimens (a female and a head) from Ashantee. The types were collected in Fantee country, Ghana by the Bowdich Expedition to Ashantee (Hughes 1985, p. 515) and are in the Natural History Museum, London (BMNH 1965.641).

2. *Coluber irregularis* Bechstein, 1802 was placed on the Official List of Specific Names in Zoology in Opinion 1374 (BZN 43: 25–26, April 1986) where it was indicated as the type species by subsequent designation by Cope (1860, p. 264) for the genus *Boiga* Fitzinger, 1826. This species commonly known as the brown tree snake or brown cat snake, has a broad distribution from Indonesia and Australia to Papua New Guinea and Melanesia, and is infamous for its invasive colonization of Guam (see e.g. Fritts & Rodda, 1998 and Rodda & Savidge, 2007). It has been placed in the genera *Dipsas* Laurenti, 1768 (by Boie, 1827, p. 549 and by Fischer, 1884, p. 49), *Triglyphodon* Duméril et al., 1854 (p. 1072), *Dipsadomorphus* Fitzinger, 1843 (by Boulenger, 1896, p. 75), *Gonyodipsas* Fitzinger, 1843 (p. 27) and mistakenly in *Hurria* Daudin, 1803 by Cogger et al. (1983, p. 209). Cogger et al. cited the name *Coluber irregularis* Bechstein as having been previously used by Wall (1924) in a subsequent type designation for *Boiga* Fitzinger, 1826. However, Wall (1924, p. 873) actually attributed *Coluber irregularis* to Merrem in his type species designation. *Coluber irregularis* Bechstein, 1802 was assigned to *Boiga* by Barbour (1912, p. 126), but never to *Coluber*, *Philothamnus* or *Dendrophis*. The attribution of *Coluber irregularis* to Merrem in Bechstein (1802) as given by Boulenger (1896, p. 75), Cogger et al. (1983, p. 209) and Rasmussen & Stimpson (1983, p. 209), or to Merrem by earlier authors (e.g. Duméril et al., 1854, p. 1072; de Rooij, 1917, p. 201; Wall, 1924, p. 873) was not accepted in Opinion 1374 (BZN 43: 25–26, April 1986), and it was stated that Bechstein alone was responsible both for the name and for satisfying the criteria of availability. The taxonomic status of the species *Boiga irregularis* (Bechstein, 1802)

was discussed by Rasmussen & Stimpson (1983, p. 209), while Cogger et al. (1983, pp. 209–210) discussed its nomenclature. Boulenger (1896, p. 75) gave additional information on its placement in other genera.

3. Although both original names have already been treated by the Commission, the fact that *Coluber irregularis* Leach in Bowdich, 1819 is a junior primary homonym of *Coluber irregularis* Bechstein, 1802 was never discussed. The situation is complicated by the fact that both taxa have junior synonyms. According to Article 23.3.5 of the Code a primary junior homonym needs to be replaced by the next (oldest) available name from among its synonyms unless the provisions of Article 23.9.5 apply.

4. Bechstein (1802, p. 239) referred his *Coluber irregularis* to Merrem's 'Beytr. zur Naturgesch. der Amph. III S. 25. Fig. 4'. (The volume should be corrected to 'II'). But in that work, Merrem (1790) did not use any Latin binomen for the taxon illustrated in Fig. 4. Daudin (1803a, p. 277, footnote; pl. LXVI) used the name *Hurria pseudoboiga* for the same species of snake, referring to the same illustration by Merrem (1790, Fig. 4). Cogger et al. (1983, p. 209) erroneously interpreted Daudin's name as a replacement name, but in fact *Hurria pseudoboiga* is a junior objective synonym of *Coluber irregularis* Bechstein.

5. Loveridge (1955, p. 88) listed *Coluber caesius* Cloquet, 1818 as a senior synonym of *Philothamnus irregularis* Leach in Bowdich, 1819. *C. caesius* was originally proposed by Cloquet (1818, p. 201) as a replacement name for '*Coluber caerulescens* Lacépède', which appeared to be preoccupied by *C. caerulescens* Linnaeus, 1758 (p. 227), type locality 'Habitat in Indiis' (the change to 'Habitat in America australi et India' made by Gmelin, 1788, p. 1119 is rather surprising). *Coluber caerulescens* 'Lacépède' was in fact proposed by Daudin (1803b, p. 54) for 'L'azurée' of Lacépède. Loveridge (1958, p. 85) regarded *Coluber caerulescens* Daudin, 1803 as a replacement name for *Coluber caeruleus* Lacépède, 1789 which was preoccupied by *Coluber caeruleus* Linnaeus, 1758 (p. 218) with 'Habitat in America', confirmed by Gmelin (1788, p. 1093). Lönnberg (1896, p. 7) stated that specimen no. 23 (now UUZM # 149), listed as the type specimen of *Coluber caerulescens*, did not correspond to *C. caerulescens* Linnaeus but rather to *C. viridissimus* Linnaeus (currently *Philodryas viridissimus*). A similar statement can be found in Wallin's catalogue of Linnaean type specimens in the Uppsala Museum (Wallin, 2001, p. 123). Kullander (1997) linked the name *caerulescens* to specimen NRM cat. no. 36 in the Swedish Museum of Natural History, but Anderson (1898, p. 26) thought the type-specimen was among the four lost specimens of the five that were in the Museum Drottningholmense. Anyway, the ventral and subcaudal scales counts given by Linnaeus (215 and 170, respectively) do not correspond to the known variation for *Philothamnus irregularis* of 151–186 ventrals and 93–145 subcaudals (Hughes, 1985, pp. 526–527; Meirte, 1992, p. 298; Chippaux, 2006, p. 129).

6. The Commission ruled in Opinion 1463 (BZN 44: 256–267, December 1987) that all editions of 'de Lacépède, 1788–1789, Histoire naturelle des Serpens and later editions' (1790, 1799a, b, 1825, 1834, 1836) are unavailable works, i.e. rejected as not being entirely binominal. Only a few names (*Crotalus piscivorus* and *Coluber triangulum*) were excepted. By this action, the confusing use of both *caeruleus* and *caerulescens* (which can often be referred to the Linnaean taxa, but not always) in these works of Lacépède was solved. The name *Coluber caesius* Cloquet, 1818 should no longer be considered a replacement name, as pointed out by Loveridge (1958), but

as an originally proposed name for this species. Its type is the 'Cap Vert' specimen first mentioned as 'L'azurée' in Lacépède (1789, p. 276) and deposited in the Paris Museum. The bluish coloration referred to by the name 'L'azurée' can be explained by the fact that in *Philothamnus* the bright green in life becomes vivid blue when preserved due to the dissolving of yellow pigments in spirit.

7. *Coluber azureus* Bonnaterre, 1790 (p. 13), is also clearly based on Lacépède's (1789) specimen. *C. azureus* antedates the name *C. caesius* Cloquet, 1818 (see Sherborn & Woodward 1906, p. 580, for the correct date of publication). The type specimen is still in the Paris Museum (MNHNP 3464).

8. Junior synonyms are also available for *Philothamnus irregularis* Leach in Bowdich, 1819. The oldest is *Dendrophis chenonii* Reinhardt, 1843 (p. 246), which was placed in synonymy by Loveridge (1958, p. 85). For *Dendrophis (Philothamnus) albovariata* A. Smith, 1848 (pl. 65 & pl. 64, fig. 3) the publication year '1840', as indicated by Loveridge, is wrong (see Waterhouse 1880, p. 490, for publication dates and contents). The position of the taxon *D. albovariata* A. Smith, 1848 among the synonyms of *P. irregularis* Leach in Bowdich, 1819, as stated by Günther (1863, p. 284) and Boulenger (1894, p. 96), differs from the conclusion of Barboza du Bocage (1883, p. 19) who linked *D. albovariata* to *Philothamnus smithii*, a replacement name for *Dendrophis (Philothamnus) semivariiegata* A. Smith, 1847 (pl. 59, pl. 60, pl. 64 fig. 1; see Boulenger 1894, p. 99). Unfortunately, the type specimen of *D. albovariata* A. Smith, 1848 appears to be lost (FitzSimons 1937, p. 273). Hughes (1985, p. 518) and Broadley (1983, p. 238) did not consider *D. albovariata* as a synonym of *P. irregularis*, but as a synonym of *P. angolensis* Barboza du Bocage, 1882. Its synonymy with *P. natalensis* (A. Smith, 1848), as found on the Uetz & Hallermann (2013) database, remains undocumented.

9. The name *caesius* Cloquet, 1818 was never used as a valid taxon name after its publication. The name *azureus* Bonnaterre, 1790 was never used after Merrem (1820). The name *chenonii* Reinhardt, 1843 has not been used as valid for the last 130 years.

10. The following references have used *Philothamnus irregularis* Leach in Bowdich, 1819 as a valid name [excluding internet references] since 1962: Barnett et al. (2001, p. 11), Barnett & Emms (2005, p. 23), Böhme (1978, p. 396), Böhme et al. (2011, p. 46), Broadley (1966, p. 418), Brogard (2005, p. 140), Butler (1990, p. 30), Chippaux (2001, p. 123; 2006, p. 128), Chirio (2009, p. 28), Chirio & Ineich (2006, p. 51), Chirio & LeBreton (2007, p. 514), Coborn (1991, p. 271), Cundall & Irish (2008, p. 642), Doucet (1963, p. 250), Derleyn et al. (1983, p. 781; 1984, p. 43), Dunger (1973, p. 160), Emms et al. (2007, p. 8), Fitch (1970, p. 142), Graber (1966, p. 139), Greenbaum & Carr (2005, p. 14), Gruschwitz et al. (1991, p. 28), Håkansson (1981, p. 160), Hughes (1983, p. 328; 1985, p. 515), Hughes & Barry (1969, p. 1016), Hulselmans et al. (1970, p. 194; 1971, p. 48), Hulselmans & Verheyen (1970, p. 202), Ineich (2003, p. 618), Joger (1990, p. 97), Leaché (2005, p. 18), LeBreton (1999, p. 89), Mané (1992, p. 19), Mattison (1999[2005], p. 169), Meirte (1992, p. 73; 1999, p. 151), Menzies (1966, p. 172), Miles et al. (1978, p. 452), Moore & Jackson (2010, p. 182), Obst et al. (1988, p. 595), Papenfuss (1969, p. 282), Penney (2009, p. 41), Pitman (1974, p. 89), Porter (1972, p. 407), Raxworthy & Attuquayefio (2000, p. 555), Roman (1974, p. 50; 1980, p. 89; 1984, p. 39), Rödel et al. (1995, p. 5; 1999, p. 168), Segniagbeto et al. (2011, p. 335), Spawls et al. (2002, p. 353), Stucki-Stirn (1979, p. 287), Thieme et al. (2005, p. 332), Trape (2005, p. 42), Trape & Mané (2000, p. 23; 2002, p. 149; 2004,

p. 14; 2006, p. 138), Ullenbruch et al. (2010, p. 43), Villiers (1963, p. 1371; 1975, p. 117), Welch (1982, p. 167). The name *Coluber azureus* Bonnaterre, 1790 has not been used as valid after 1899.

11. In the interests of stability the name *Coluber irregularis* Leach in Bowdich, 1819 should be given priority over the underused name *Coluber azureus* Bonnaterre, 1790 under Article 23.9.2, as conditions of both Articles 23.9.1.1 and 23.9.1.1 are met. Here the name *Coluber azureus* Bonnaterre, 1790 is declared to be a nomen oblitum and *Coluber irregularis* Leach in Bowdich, 1819 to be a nomen protectum.

12. However, *C. irregularis* Leach in Bowdich, 1819 is a junior primary homonym of *C. irregularis* Bechstein, 1802, the latter name being still in use. Therefore the case is referred to the Commission under Article 23.9.5.

13. The International Commission on Zoological Nomenclature is accordingly asked to use its plenary power:

- (1) to rule that the specific name *Coluber irregularis* Leach in Bowdich, 1819 is not invalid by reason of being a junior primary homonym of *Coluber irregularis* Bechstein, 1802;
- (2) to amend the entry on the Official List of Specific Names in Zoology for the specific name *irregularis* Leach in Bowdich, 1819, as published in the binomen *Coluber irregularis*, to record that it is not invalid by reason of being a junior primary homonym of *Coluber irregularis* Bechstein, 1802.

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